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Docket No.: A-3945

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MAIL STOP: APPEAL BRIEF-PATENTS

  
April 21, 2006

Date

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
Before the Board of Patent Appeals and Interferences

Applic. No. : 10/801,964 Confirmation No.:3945  
Inventor : Martin Greive  
Filed : March 15, 2004  
Title : Device for Conveying Sheets Through a  
Printing Machine  
TC/A.U. : 3651  
Examiner : Leslie August Nicholson  
Customer No. : 24131

Hon. Commissioner for Patents  
Alexandria, VA 22313-1450

BRIEF ON APPEAL

S i r :

This is an appeal from the final rejection in the Office action dated November 25, 2005, finally rejecting claims 1-6 and 8-11.

Payment in the amount of \$500.00 to cover the fee for filing the *Brief on Appeal* is included.

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Application No. 10/801,964  
Brief on Appeal, dated 4/21/06

Real Party in Interest:

This application is assigned to Heidelberger Druckmaschinen AG of Heidelberg, Germany. The assignment will be submitted for recordation upon the termination of this appeal.

Related Appeals and Interferences:

No related appeals or interference proceedings are currently pending which would directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

Status of Claims:

Claims 1-6 and 8-11 are rejected and are under appeal. Claims 1-9 were cancelled in a Final Amendment filed on January 25, 2006.

Status of Amendments:

No claims were amended after the final Office action. An amendment under 37 CFR § 1.116 was filed on January 25, 2006. The Primary Examiner stated in an Advisory Action dated February 15, 2006 that the request for reconsideration had

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been considered but did not place the application in condition for allowance.

Summary of the Claimed Subject Matter:

As stated in the first paragraph on page 1 of the specification of the instant application, the invention relates to a device for conveying sheets through a printing machine. The device has a conveyor belt which runs over deflection rollers and guide elements and to which sheets can be fed individually one after another. The device also has an apparatus for setting the distance between the surface to be printed of a sheet and a print head.

Appellants stated on page 6 of the specification, line 20, that, referring now to the figures of the drawing in detail and first, particularly, to Fig. 1 thereof, there is shown a diagram of a device for conveying sheets 1 along ink jet print heads 2, 3. Each ink jet head 2, 3 has rows of nozzles 5, 6 which extend over the entire width of the sheet 1 transversely to the transport direction 4. The ink jet print heads 2, 3 are mounted fixedly on a frame 7. In order to convey the sheet 1, a conveyor belt 8 is provided which is guided over deflection rollers 9-14 arranged fixedly on the frame 7. The deflection roller 11 is coupled to a motor 15. In the

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conveying path of the sheet 1, the conveyor belt 8 runs over guide elements 16-19, the guide elements 17-19 being combined in constructional terms with suction boxes which are not shown separately in Fig. 1. The guide elements 17, 19 are mounted on the axles 20, 21 of the deflection rollers 12, 13 so as to pivot in the direction of the arrows 22, 23. The guide elements 17, 19 are coupled to the central guide element 18 via joints 24, 25. The guide element 18 can be adjusted in the vertical direction 26 in a linear guide 27. A parallelogram-like mechanism is provided to adjust the height of the guide element 18. Two arms 30, 31, whose ends are connected to a transverse bar 32 in an articulated manner, are disposed on two stationary rotary joints 28, 29. The joints 33, 34 at the end of an arm 30, 31 are enclosed by drivers 35, 36 which are connected to the guide element 18. The transverse bar 32 is connected to the piston of an operating cylinder 38 via a coupling element 37.

Appellants explained of page 7 of the specification, line 22, that, when printing is performed using the rows of nozzles 5, 6, the surface of the sheet 1 has to be at a predetermined distance  $a$  from the ink jet print heads 2, 3. The height of the guide element 18 is adjusted in accordance with a thickness  $d$  of the sheets 1. When pressure is applied to the operating cylinder 38, the coupling element 37 performs a

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displacement in the horizontal direction 39. This displacement is transmitted to the transverse bar 32 via a joint 40. The arms 30, 31 are pivoted about the rotary joints 28, 29 in the direction of the arrows 41, 42 via the joints 33, 34. As a result, the transverse bar 32 is also moved in the vertical direction 26. This vertical movement of the transverse bar 32 is transmitted to the guide element 18 via the drivers 35, 36.

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Appellants further stated on page 8 of the specification, line 10, that, Fig. 2 shows a perspective illustration of three coupled suction boxes 43-45 which correspond to the guide elements 17-19 according to Fig. 1.

Appellants further explained on page 8 of the specification, line 14, that, already-mentioned designations in the following description, refer to identical or functionally equivalent elements of the invention.

Appellants further stated on page 8 of the specification, line 18, that, the suction boxes 43-45 have rows of holes 46 which are connected to a vacuum source via a line system 47. The rows of holes 46 interact with suction openings in the conveyor belt 8 (not shown in Fig. 2) which glides over the suction boxes 43-45. The suction boxes 43-45 have bearing

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elements 48-51 which are arranged on the axles 20, 21 of deflection rollers 12, 13 for the conveyor belt 8. When, in the case of thin paper, the suction box 44 is set to a high position using the transverse bar 32, 76, the suction boxes 43, 44 and 44, 45 in each case form edges 52, 53 over which the conveyor belt 8 runs. When a sheet 1 is transported on the conveyor belt 8, the sheet 1 also moves over the edges 52, 53, as a result of which it acquires a certain stability and the side edges of a sheet 1 are not raised. In the case of thicker sheets 1, edges 52, 53 are not formed in such a pronounced manner, which is not disadvantageous because the sheets 1 are then inherently stable.

Grounds of Rejection to be Reviewed on Appeal

1. Whether or not claims 10 and 11 are obvious over Rasmussen (U.S. Patent No. 5,992,994) in view of Damkjaer (U.S. Patent No. 5,305,869) under 35 U.S.C. §103.

Argument:

Whether or not claims 10 and 11 are obvious over Rasmussen in view of Damkjaer under 35 U.S.C. §103.

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Claims 10 and 11 are not obvious over Rasmussen in view of  
Damkjaer under 35 U.S.C. §103:

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful.

Claim 10 calls for, *inter alia*:

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three suction boxes each disposed at a respective one of the three conveying segments, the suction boxes having guide elements for the conveyor belt.

The Rasmussen reference discloses a media support system having one conveyor belt (62). A print media (32) is held on the belt (62). As shown in Fig. 3 of Rasmussen, the belt (62) is led over two support rollers (66 and 68). Guide shims (80 and 82) and a roller (84) are disposed laterally to the support rollers (66 and 68) and help secure the print media (32) outside of the printzone. The print media (32) is in web form. As shown in Fig. 4 of Rasmussen, the support rollers (66 and 68) are replaced with a height adjustable support shoe (95). The support shoe (95) does not include a vacuum, which is why the belt (62) does not include any vacuum openings.

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The Examiner's allegation on page 6 of the final Office action, that Damkjaer discloses three suction boxes with three guide elements, is not correct. More specifically, Damkjaer discloses an endless chain link conveyor with a support surface (2). The chain link conveyor includes rows of interconnected chain links (1). The chain link conveyor is used for conveying items such as tins, cans, buckets, or

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canisters. Because these items are not flexible, the support surface (2) must be flat (Fig. 2). Displacing or deflecting just one chain link (1) from a planar position is not possible because the objects would not be reliably held on the surface (2). This is even more critical when the objects are placed over a joint between two of the links (1). Damkjaer discloses that the links (1) are provided with openings (17) and vacuum is supplied to all of the links (1). Damkjaer is completely silent about multiple suction boxes. Accordingly, Damkjaer does not disclose three suction boxes each disposed at a respective one of the three conveying segments, the suction boxes having guide elements for the conveyor belt. Therefore, the Examiner's allegation that Damkjaer discloses three suction boxes with three guide elements, is in error.

Furthermore, the Examiner refers to column 4, lines 24-42 of Damkjaer. However, the disclosure to which the Examiner refers does not disclose a suction box, the disclosure in



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column 4, lines 24-42, only pertains to a chain link (1')  
(Figs. 3a-3c). The Examiner has not provided any indication  
as to the parts of Damkjaer, which the Examiner considers to  
be suction boxes.

It is a requirement for a *prima facie* case of obviousness,  
that the prior art references must teach or suggest all the  
claim limitations.

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The references do not show or suggest three suction boxes each  
disposed at a respective one of the three conveying segments,  
the suction boxes having guide elements for the conveyor belt,  
as recited in claim 10 of the instant application.

In item 7 of the Office action, the Examiner correctly stated  
that Rasmussen does not disclose three suction boxes each  
disposed at a respective one of the three conveying segments,  
the suction boxes having guide elements for the conveyor belt.

As seen from the above-given remarks, the Damkjaer reference  
discloses that a vacuum is provided to all of the links.

Damkjaer does not disclose that three suction boxes are each  
disposed at a respective one of three conveying segments, the  
suction boxes having guide elements for the conveyor belt.

This is contrary to the invention of the instant application

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as claimed, in which three suction boxes are each disposed at a respective one of the three conveying segments, the suction boxes have guide elements for the conveyor belt.

The references applied by the Examiner do not teach or suggest all the claim limitations. Therefore, it is believed that the Examiner has not produced a *prima facie* case of obviousness.

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Since claim 10 is allowable, dependent claim 11 is allowable as well.

The honorable Board is therefore respectfully urged to reverse the final rejection of the Primary Examiner.

Respectfully submitted,



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Claims Appendix:

10. A device for conveying sheets through a printing machine having a print head, the device comprising:

a plurality of deflection rollers and a conveyor belt disposed to run over said deflection rollers, said conveyor belt being configured to receive individual sheets one after another;

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three mutually adjacent conveying segments defining a conveying path for the sheets, said conveying segments including a central conveying segment opposite the print head;

three suction boxes each disposed at a respective one of said three conveying segments, said suction boxes having guide elements for said conveyor belt;

an apparatus for adjusting a height of a central said suction box in a direction of the print head and said guide element assigned to said central conveying segment opposite the print head in accordance with a thickness of the sheets, for setting a spacing distance between a surface of a sheet to be printed and the print head, said central suction box being connected to the adjacent said suction boxes in an articulated manner, said adjacent suction boxes being

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pivotally mounted and articulated about respective pivot axes coaxially aligned in each case with a rotational axis of a respective said deflection roller.

11. The device according to claim 10, wherein said apparatus for adjusting said guide element opposite the print head includes a lever mechanism.

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12. The device according to claim 10, wherein said apparatus for adjusting said guide element opposite the print head includes rollers for vertically guiding said guide element.

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Evidence Appendix:

No evidence pursuant to §§ 1.130, 1.131, or 1.132 or any other evidence has been entered by the Examiner and relied upon by appellant in the appeal.

(if a 1.131 or 32 Declaration was filed in this application, it must be appended to the Brief on Appeal).

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Related Proceedings Appendix:

Since there are no prior or pending appeals, interferences or judicial proceedings which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in this appeal, no copies of decision rendered by a court or the Board are available.

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